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**BLOOMING RESEARCH CONCEPT
FOR SUSTAINABLE DENTAL SCIENCES**

Date:

28th November 2013 (Thursday)

ABSTRACT

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28TH NOVEMBER 2013

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ORAL PRESENTATION : CLINICAL SCIENCES

Presence and/or agenesis of third molar germs depend on sagittal maxillomandibular jaw dimensions in orthodontic patients in HUSM

CS1

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To investigate the presence and/or agenesis of third molar (M3) tooth germs in orthodontics patients in Malaysian Malay and Chinese population and evaluate the relationship between presence and/or agenesis of M3 with different skeletal malocclusion patterns and sagittal maxillomandibular jaw dimensions. Pretreatment records of 300 orthodontic patients (140 males and 160 females, 219 Malaysian Malay and 81 Chinese, average age was 16.27 ± 4.59) were used. Third-molar agenesis was calculated with respect to race, genders, number of missing teeth, jaws, skeletal malocclusion patterns and sagittal maxillomandibular jaw dimensions. The Pearson chi-square test and ANOVA was performed to determine potential differences. The percentages of subjects with 1 or more M3 agenesis were 30%, 33% and 31% in the Malaysian Malay, Chinese and total population, respectively. Overall prevalence of M3 agenesis in male and female was equal ($P=0.299$). The frequency of the agenesis of M3s is greater in maxilla as well in right side. The prevalence of M3 agenesis in those with a Class III and Class II malocclusion was relatively higher in Malaysian Malay and Malaysian Chinese population respectively ($P= 0.774$). The frequency of M3 agenesis (All 4 M3s) increased with an increasing maxilla and with a decreasing mandible. In conclusion, these results revealed that presence and/or agenesis of M3 does not depend significantly on race, sex, side, jaw involvement, sagittal skeletal malocclusions, vertical skeletal malocclusions and sagittal jaw relationships in this orthodontic population.

Hypertension in periodontitis patients and its association with the severity of chronic periodontitis

CS2

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Chronic periodontitis (CP) is an inflammatory disease of the supporting tissues of the teeth and caused by specific microorganism. Hypertension is one of the major causes of cardiovascular disease and periodontal disease has recently drawn increasing attention because of its potential relationship with cardiovascular disease. The objectives of the study were to determine the prevalence of the hypertension in CP patients, to compare the mean of periodontal parameters (plaque score, gingivitis score and clinical attachment loss) in hypertension and non-hypertension with CP patients as well as to evaluate the association between hypertension and severity of chronic periodontitis. Two hundred records of CP patients treated in Dental Clinic, Hospital Universiti Sains Malaysia, Kelantan from 2010 until 2013 were retrieved and reviewed. The diagnosis of periodontal disease and the presence of hypertension were recorded. The severity of chronic periodontitis was classified into mild, moderate and severe according to probing pocket depth. The data was obtained and analyzed using SPSS version 20.0. Majority of the subjects were from Malay ethnic group (94.4%) with the range of age between 41-61 years (67.8%). The prevalence of hypertension in chronic periodontitis patients was 12.2%. There was no significant difference of mean plaque score ($p=0.846$) and gingivitis score ($p=0.154$) between hypertensive and non-hypertensive patients with CP. However, there is a significant difference of clinical attachment loss for hypertensive patients with CP ($p=0.047$). There was no significant association between hypertension and severity of CP ($p=0.199$).

The prevalence of dysphagia in patients with squamous cell carcinoma of the head and neck at Hospital USM

CS3

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Dysphagia is a disruption in the swallowing process which may be life-threatening in patients with head and neck cancer (HNC). As such, the multidisciplinary management of dysphagia is crucial in a hospital setting. This study was aimed to determine the prevalence of dysphagia in patients with HNC attending oncology clinic at Hospital USM from 2002 to 2012. This is an institutional retrospective study whereby 72 subjects aged 18 years and above who had squamous cell carcinoma (SCC) of HNC were studied. Subjects with dysphagia were selected from patients who have experienced any of these criteria: having difficulty in swallowing or no oral intake, frequent choking and excessive coughing during mealtime, need for a diet modification, need for non-oral nutritional support, need for individual mealtime supervision and/or history of aspiration pneumonia. Patients' records were reviewed and explored for signs and symptoms of dysphagia; relevant case notes were recorded proforma which has been designed and adapted from Winstein, 1983. Data were analysed with SPSS version 20.0. All quantitative and qualitative data were expressed as percentage. Dysphagia was present in 44.8% of patients in which 6.7% had aspiration pneumonia. Difficulty in swallowing was reported in 83.3% of them, 6.7% had complaint of frequent choking, 6.7% had diet modification, and 3.3% had non-oral nutritional support. The high prevalence of dysphagia obtained from this study should be disseminated to other clinicians to increase their awareness on the importance of dysphagia management in HNC patients at Hospital USM and for further research in the future.

The Effect of Tualang Honey in the healing of post extraction wound

CS4

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For years extraction has been treated as common procedure and only analgesic given to patient as aid in reducing the pain. This study aimed to compare the effectiveness of Tualang honey in healing of post extraction socket against a control study. The study involved the use of Tualang honey in the experimental group and Surgical in both experimental group and the control group. This is an experimental clinical study whereby 8 healthy subjects with no complicated extraction were carefully selected and divided into 2 groups which is the experimental group and the control group. Subjects are then evaluated weekly on three sessions. Patient is evaluated on post-operative pain, presence of alveolar osteitis, acute inflamed alveolus, acute infected alveolus and gingival health. Post operative pain is evaluated by Visual Analog Scale while gingival health is evaluated visually. Out of 4 subjects in the experimental group, 3 of them claim that the pain was minimal on the day of extraction and gone on the next day. One of them said that the pain persisted for 1 week before subsiding. For all the subjects in the experimental group, none of them suffers from any post extraction complication. All of them only have pain score of 1. For the control group, all of them claims that the pain persisted for 3 days before subsiding without any with pain score 1. In conclusion, the findings demonstrate Tualang honey has a significant analgesic and healing effect on post extraction socket.

Comparison between Etoricoxib, Celecoxib and Diclofenac in post-operative pain management following third molar surgery. A preliminary study.

CS5

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Analgesia prescription following surgical removal of impacted third molar is often required to relieve the post-operative pain. Non steroidal anti-inflammatory drugs (NSAIDs) such as Etoricoxib, Celecoxib and Diclofenac are among the most commonly prescribed drugs. This study aims to compare the efficacy of Etoricoxib, Celecoxib and Diclofenac in relieving the post-operative pain following surgical removal of impacted third molar. Twenty-four subjects who met the inclusion and exclusion criteria for third molar surgery were randomly assigned into three groups, receiving either Etoricoxib, Celecoxib or Diclofenac for post-operative pain control. Each subject were then given a set of self-administered visual analogue scale (VAS) to record their pain level at a specific time for seven days duration. Kruskal-Wallis Test indicated that there were significant differences between three groups of drugs in post-operative pain score at twelfth hour, third, fifth and sixth day with $p < 0.05$. From Mann-Whitney Test, there were significant differences between Etoricoxib and Diclofenac in post-operative pain score at third and sixth day with $p = 0.018$ and $p = 0.03$ respectively. In conclusion, although there was no significant difference between three analgesic groups on first eight hour of the first day, median pain score of Etoricoxib shows to be the best pain reliever for the first day. Lowest median pain score among the treatment groups on the first day and significant difference between Etoricoxib and Diclofenac on third and sixth day post-operative indicate that Etoricoxib is the best analgesic for post-operative pain management following third molar surgery.

Palatine rugae print identification among Deuteromelayu Subrace Using fingerprints formulation approaching techniques

CS6

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The differences of palatine rugae print patterns for each person can be used to facilitates personal identification in forensic dentistry. The aim of this study was to apply the palatine rugae as a means of identification using palatine fingerprints formulation approaching techniques. A descriptive research was done among 140 subjects both males and females deuteromalayan subrace of Permata Cimahi residents. This research was done by taking maxillary negative models used dental alginate impression, making maxillary positive models used dental stone and observing palatine rugae on the positive model from all of the subjects. Then the data form this observation was entered into the palatine rugae print formula. Palatine rugae print formula which is made based on fingerprints formula, was a combination from two sub formula, it was "each side palate formula" (consist of main rugae, rugae counting, and rugae tracing category) and "each palatine rugae formula". This formula showed that palatine rugae patterns among individuals in the Deuteromalayan Subrace were different each other and can be expressed in a spesific formula. Means every person have their own spesific palatine rugae formula that different from others. Probabilities rules obtained there were no same palatine rugae print pattern among 1: $1.075.850.222,00 \times 10^3$ people. This research indicated that the Deuteromalayan Subrace palatine rugae pattern can be identified using palatine rugae print formula as the result form fingerprints formula approaching techniques.

The validity of panoramic radiography in evaluating mandibular canal and impacted third molars comparison with cone beam computed tomography

CS7

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This study evaluated the validity of panoramic radiography and cone beam computed tomography (CBCT) in the assessment of mandibular canal and impacted third molar. In this descriptive-analytical study, 58 mandibular third molars from 42 patients who showed a close relationship between impacted third molar and canal on panoramic radiographs were selected. They were then classified into seven radiographic markers in panoramic radiographs (superimposition, darkening of the root, interruption of the white lines, root narrowing, canal diversion, canal narrowing, and also closed distance in OPG < 1mm). The groups were further assessed with CBCT to see presence or absence of contact. The three most common markers seen in panoramic images are superimposition, interruption of white line and root darkening. In CBCT, superimposition marker always presented higher frequency of contact with canal compared to non-contact group. For the interruption of white line and darkening of root, the percentage of no-cortical border and the distance group is higher than the cortical border group. For the tooth found closed with canal in OPG, almost all presented with considerable distance in CBCT. Presence or absence of radiological sign in panoramic radiography will not properly predict the existence of a closed relationship with third molar and it is suggested that in case of tooth-canal overlapping, the patient should be referred for CBCT assessment.

The maxillary and mandibular positions in class ii division 1 malocclusion

CS8

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Class II division 1 malocclusion has wide variation in terms of its skeletal malformation. It can be due to overdeveloped maxilla, underdeveloped mandible or combination of both. Understanding the position of maxilla and mandible is crucial in determining the treatment plan. This study is done to compare the maxilla and mandibular positions of patients with Class II division 1 and Class I malocclusion seen in Klinik Pergigian Pakar, HUSM. Cephalograms from eighty seven Class II division 1 and 30 Class I patients age range 13 to 37 years old with mean 23 years old (SD of 4.69) which fulfilled the inclusion criteria were chosen. Radiographs from patients with congenital craniofacial abnormalities and history of orthodontic treatment or orthognathic procedure were excluded. The cephalograms were traced and measurements were analyzed using the Centricity PACS-IW. Independent t-test was used to compare the measurement of the two groups and $p \leq 0.05$ was set to consider the result to be statistically significant. There is significant difference of the relationship of maxilla and mandible with the cranial base, midface length and mandibular length between Class I and Class II division 1 patients. It was noted that midface and mandibular length in Class II division 1 patient were shorter than in Class I patients. This finding suggested that the appropriate treatment for Class II div 1 malocclusion patients seen in HUSM is by promoting the development of mandible and camouflage the skeletal differences.

ORAL PRESENTATION – DENTAL EDUCATION

The relationship between dental caries status and oral health attitudes and behavior in USM undergraduates dental students.

DE1

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Oral health behaviour of dental students and their attitudes reflect their understanding of the importance of preventive dental procedures of their patients. The aim of this study was to investigate the relationship between oral health attitudes and behavior as measured by the Hiroshima University-Dental Behavioral Inventory (HU-DBI) and dental caries status using the DMFT of undergraduates dental students of USM. This is a cross-sectional study include 181 students and participation was selected using systematic random sampling. The HU-DBI questionnaires (in English) were distributed (n=181) and all participants were submitted for clinical examination. Dental caries status was evaluated using the WHO caries diagnostic criteria for decayed, missing, and filled teeth (DMFT). Data were statistically analyzed using IBM PSW 20.0. Data of DMF values to the HU-DBI score were analysed using Independent t-test. There were 41 students (22.65 percent) caries free (DMF=0). DMFT score ranged from 0-17 (average 3.77). A statistically significant relation was found between 13 items and DMF scores or their components and indices. The HU-DBI score ranged from 0 to 11 (mean 7.50, SD=2.06). Low DT values significantly correlated with a high total HU-DBI score ($p < 0.05$); that is, subjects with low levels of dental disease had more positive oral health attitudes and behavior. In undergraduate dental student, dental disease, as measured by DMF scores were related to HU-DBI, which demonstrate the relationship of dental caries status with oral health behaviour. Special emphasis on oral health education should be given to improving dental students' oral health attitudes and behaviour.

Relationship between nutritional status, dietary sugar exposure, and DMFT and oral health related-quality of life (OHQoL) among adults attending USM Dental Clinic

DE2

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The aim of this study was to examine the relationship between Body Mass Index and amount of dietary sugar exposure, and DMFT and oral health related-quality of life (OHQoL) among adults aged 19 to 59 years old attending USM Dental Clinic. Sixty subjects with no medical illness had consented and completed examination & diagnosis, were selected systematically. All respondents' anthropometry and DMFT were taken. The sociodemographic information, FFQ on sugary foods and drinks, and s-OHIP (M) questionnaires were distributed to be self-administered and assisted when needed. The mean age of respondents was 31.4 ± 10.7 , majority were women and Malays, nearly half possessed tertiary education and half were employees. Most of the respondents' monthly household income was above the poverty line. The mean DMFT index was 9.4 ± 7.8 . Mean BMI was 23.6 ± 5.2 kg/m² with one third of respondents were overweight and obese. The highest amount of sugary foods and drinks exposure daily came from non-carbonated soft drinks (30.7 ± 58.2 g/day) followed by carbonated soft drinks (14.0 ± 44.4 g/day) and self-prepared drinks (6.5 ± 4.2 g/day). There were no significant correlations between BMI and amount of dietary sugar exposure daily, and DMFT and OHQoL. However, the mean amount of commercial and traditional *kuih* intake daily had low correlation with DMFT; and the mean amount of biscuit and cereal daily had low correlation with OHQoL. In conclusion, BMI is not an indicator for increased risk of dental caries and measurement of OHQoL. However, different dietary sugary food groups have low significant influence on DMFT and OHQoL.

The oral impacts on daily performance among children with hearing impairment attending a special school for deaf in Lati, Pasir Mas, Kelantan

DE3

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Assessment of the impact of oral diseases on everyday life of disabled children is important as it does not only limit their current functioning and psychosocial well being but also compromise their future development and achievements. This study aimed to determine the prevalence and association between oral health problems and severity of oral impacts on daily living of hearing impaired (HI) children. A cross sectional study was conducted on 66 HI students who were in Standard 1 to 6 of Sekolah Kebangsaan Pendidikan Khas, Lati, Pasir Mas, Kelantan. A face-to-face interview was carried out with the help of sign-language teacher. A validated questionnaire "Oral health problems and the impact of oral health on daily living (Child-OIDP)" with pictures that has been translated into Malay language was used. Data were analyzed using chi-square test via SPSS 20.0 software. The most prevalent oral health problems were sensitive teeth (45%), bleeding gums (41%) and oral ulcers (41%). The most prevalent impact was on eating (76.6%) followed by tooth-cleaning (64.1%) and were significantly associated with sensitive teeth and oral ulcers respectively ($p < 0.05$). Severity of the impacts were mostly in the category of 'little' (median score=1, IQR=3). Other oral conditions that contributed significantly to the impacts were toothache, swollen gum, tooth decay and halitosis. In conclusion, the most prevalent oral health problem among HI children was sensitive teeth. Oral impacts affect children's daily living mainly through difficulty in eating and tooth-cleaning and the impacts were mostly 'little' in terms of its severity.

Knowledge and utilization of fissure sealant among 4th and 5th year dental student in Universiti Sains Malaysia

DE4

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Fissure sealants are used as a preventive measure against pits and fissures on occlusal surfaces in high caries risk children. This study aimed to assess the knowledge, value, opinion and practice (KVOP) of 4th and 5th year USM dental student regarding fissure sealant application. This is a cross sectional study. Source population include folders of paediatric patients ranged from 6 to 16 years old attending HUSM Dental Clinic from 1/1/13 to 30/4/13 and all 4th and 5th year USM dental students. Questionnaires by Martin et al 2013 along with the consent form were distributed among 4th and 5th year students ($n=130$) whereas 100 folders of paediatric patients treated by 4th and 5th year USM dental students were chosen using simple random sampling. The collected data was analysed using IBM PSW 20.0. Mean (SD) and prevalence (95% CI) was used for descriptive statistics. Prevalence of fissure sealant done from the sample recorded was 50% (CI; 40%:60%) with total number of tooth sealed 68. Four main tooth sealed were first premolar 4 (5.9%), second premolar 3 (4.4%), first permanent molar 40 (58.8%), second permanent molar 13 (19.1%) and others 8 (11.8%). The overall mean (SD) of KVOP sections were: knowledge = 32.6 (3.98); value = 10.3 (2.16); opinion = 16.1 (2.08); practice = 19.9 (2.37) and total KVOP score was 79.0 (6.85). From this study, it can be concluded that USM dental student possess sufficient knowledge on practising fissure sealant on their patients.

Age estimation using lower third molar developmental stages in north-eastern Malaysian population of age below 15 years old

DE5

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The study aimed to determine the earliest age of lower third molars formation in North-Eastern Malaysian population, to evaluate the variability of lower third molar development in relations to side of dentition and sex, and the association between tooth developmental stages and chronological age. 1561 orthopantomograms of North-Eastern Malaysian population aged 15 years old and below, consisting of 727 males and 834 females from Hospital Universiti Sains Malaysia's archive which met both the inclusion and exclusion criteria were selected. The maturity stages of lower third molars (tooth 38 and 48) were assessed and scored using the modified Demirjian's stages; from bone crypt and stages A to H. The findings showed that presence of bone crypt; the earliest evidence of tooth formation; in the orthopantomograms observed was as early as 5.44 and 5.07 years old in right and left third molars respectively. The stages of development of the tooth in both sides of the mandible was strongly correlated regardless of gender, as the values of correlation coefficients between right and left third molars were 0.928 and 0.947 in male and female respectively. There was no difference in crown development between males and females at different age groups. There was a strong correlation between chronological age and lower third molar developmental stages in which the values were 0.845 and 0.848 for right and left third molars respectively. The obtained results provide strong supports for the application of lower third molars in determining age in cases of 15 years old and below.

The therapeutic communication process by dental clinical student

DE6

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Therapeutic communication is fine communications that make medical patient satisfy, especially for children. Unfortunately not many people understand how the communication works. The purpose of research was to survey the ability of dental co-assistant about make an effective therapeutic communication to maintain the pediatrics. The research has done by descriptive method which elected by accidental sampling using a case study technique. Samples are dental co-assistant who works in dental pediatric clinic on January 2013. The data analyzed by statistical analysis. There is an item checklist who surveys the ability of verbal and non-verbal therapeutic communication that had done by samples. The research show that approximately 78.25% communication item checklist has done by dental co-assistant on Dentistry Padjadjaran University. Based on result, the conclusion is dental co-assistant make a therapeutic communication quite well, but still, we need a standard operational procedure to make this communication more effective.

Keyword: Practice, Therapeutic Communication, Peadiatrics

Basic life support's knowledge among dental health care practitioners

DE7

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Basic life support's (BLS) is known as a first aid sequence which is needed to help cardiac arrest's victims. Since 2010, basic life support's new sequence was launched by heart associations worldwide for improving survival rate of victims after evaluating the old sequence. The purpose of this research is to observe dental practice's health care practitioners knowledge about new sequence of basic life support. It was done by using questionnaire in descriptive method. The sample consisted of 42 dental practice's health care practitioners in Bandung Kulon district which was gathered by total sampling technique. They had to be included in three criteria, graduated from the formal education, were not working on educational institutions and had no automated external defibrillation in clinic. The knowledge's result would be categorized as high, enough, or low. It shows that knowledge of health care practitioners about basic life support's new statute in dental clinic was 46%. Through the research, it is able to be concluded that knowledge of health care practitioners at dental practice about basic life support's new sequence in Bandung Kulon district is low.

Effect of the sound of dental drill on the perception and anxiety level of dental and non-dental undergraduates

DE8

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Dental noise by instrumentation is commonly encountered by patients in dental clinic, and has been reported to cause dental anxiety and influence patients in seeking treatment. The aim of this study was to investigate the effect of the sound of dental drill towards the perception and anxiety level of respondents. A cross-sectional questionnaire survey was carried out on a sample of 200 dental and non-dental undergraduate of Universiti Sains Malaysia respectively. Using a set of self-administered questionnaire, the effects of the sound of dental drill on respondents' perceptions and dental anxiety levels were determined. Dental Anxiety Scale (DAS) assesses the severity of dental anxiety and was interpreted using Independent-T test. Our findings showed a statistically significant difference ($p < 0.001$) among the dental and non-dental students, of which the mean score of DAS for the non-dental students were 8.23 whereas 6.39 for the latter. Statistically, 10.5 % of non-dental students had dental anxiety whereas only 3% were noted among the dental students (Pearson Chi-Square $p = 0.003$). Only 1% of the dental students rated 'hearing the drill' as extremely anxiety-provoking, compared to 8.5% for the non-dental students which is significantly higher (Pearson Chi-Square $p < 0.001$). Our results also showed 3.5% of the dental students graded maximum unpleasantness brought by the sound of dental drill. On the contrary, 6.5% non-dental students reported it as maximally unpleasant. Interestingly, 83.5% of dental student and 87.5% of non-dental student felt that procedures will be more comfortable if the sound of dental drill were lower. The overall results suggest that the sound of dental drill has significant impact on anxiety capacity especially among the non-dental students.

Anatomy as a career option in view of undergraduate medical and dental students in Universiti Sains Malaysia

DE9

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Anatomist is an important career in the future to fulfill the demand of future doctors as they play a big role in the teaching and learning program of both medical and dental profession. The aim of this study was to determine anatomy as a career option, perception on anatomy subject and methods in learning anatomy among medical and dental students in Universiti Sains Malaysia (USM). This was a survey study conducted on 400 students in USM using questionnaire. They were divided equally into their respective course and year of study. Students were guided when answering the questionnaire. Data was collected and analyzed. Result showed, 73.5 % of dental student enjoy preclinical anatomy course ($p=0.001$) and 57.5% agreed that teaching anatomy gives as much as satisfaction in treating patient ($p=0.016$). About 53.2% of medical student not using radiological film as learning method ($p=0.29$). Only 21.5% of dental student will choose anatomy as their career option ($p=0.05$). In conclusion, dental student have a good perception on anatomy subject but the choice of anatomy as their career option in the future is still low.

ORAL PRESENTATION – BASIC SCIENCES

Shear bond strength of CAD/CAM feldspathic and nano resin ceramics blocks cemented with three different generations of resin cements

BS1

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The aim of this study was to evaluate the shear bond strength between the dentin substrate and CAD/CAM feldspathic ceramic and nano resin ceramics blocks cemented with three different generations of resin cements. Sixty cuboidal blocks (Width: 4mm, height: 5mm, length: 5mm) fabricated in equal numbers from feldspathic ceramic Sirona Blocks and nano resin ceramic Lava Ultimate Blocks, and were randomly divided to six groups (n=10). The blocks were cemented to the dentin of 60 extracted human premolar using VariolinkII (3 steps), NX3 (2 steps) and RelyX U200 (1 step). All specimens were thermocycled and stored in saline solution at room temperature until shear bond strength testing, using universal testing machine with a cross head speed of 1.0mm/min. Data were analyzed by one-way ANOVA. Sirona+variolinkII(3 steps) showed the highest mean shear bond strength (8.71 Mpa). The lowest shear bond strength value(2.06 Mpa) were observed in lava+relyx(1 step). There were significant difference in mean shear bond strength between sirona+rely x and sirona+variolink, sirona+rely x and lava+variolink, sirona +variolink and lava+rely x, lava+rely x and lava+variolink, sirona +variolink and lava+NX3, as well as lava+NX3 and lava+variolink. There was no significant difference in the mean shear bond strength between groups that used the same cement but different blocks. Variolink II cement (3-steps) which require pretreatment of tooth surface, provided a higher shear bond strength than the self-adhesive cement RelyX U200 (1-step). The shear bond strength were not affected by the type of blocks used.

Key words: Feldspathic ceramics, resin cement, shear bond strength

Differential Staining For Assessing Ossification in New Born Rabbits

BS2

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During endochondral bone formation, mesenchyme condensations give rise to cartilages that are eventually replaced by bone. However, there are some permanent cartilages that do not ossify. Differentiation of cartilages and bone is possible by staining using alcian blue and alizarin red which suits best for fetal, newborn, and early post-natal stages of development. This study aimed to assess the ossification of new born rabbits using alcian blue and alizarin red staining. It was conducted *in vitro* using new born rabbits from a female New Zealand white rabbit after approval from the animal ethics committee. The new born rabbits (n=3) were euthanized by injecting an overdose of pentobarbital sodium. The specimens were dissected, eviscerated and fixed in ethanol solution for 48 hours before transferred to acetone for 2 days at 37°C. The specimens were placed for 3 days in freshly prepared alcian blue and alizarin red staining solution (Alcian Blue 8GX and Alizarin Red S). Next, they were incubated in 1% potassium hydroxide solution for 24 hours followed by 80% glycerol and 1% potassium hydroxide for another 3 days. Finally, the specimens were transferred to 100% glycerol and preserved for visualization and photography (Olympus SZ61). The specimens stained red in the bony area and blue in cartilaginous area and it was possible to differentiate between both. No anomalies of both cartilaginous and bony parts of the specimens were noticed. In conclusion, alcian blue and alizarin red staining enable easy differentiation between the cartilaginous and bony parts of the new born rabbits.

The antimicrobial properties of different formulations of white mineral trioxide aggregate and Malaysian white Portland Cement against selected endodontic pathogens

BS3

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This study aimed to determine and compare the antimicrobial properties of non-accelerated and accelerated white Mineral Trioxide Aggregate (WMTA, Dentsply, USA) and Malaysian white Portland Cement (MWPC, Aalborg, Malaysia) on selected endodontic pathogens, using agar diffusion test. Müeller Hinton blood agar was used for *Enterococcus faecalis* and *Actinomyces sp.*, while Sabouroud dextrose agar was prepared for *Candida albicans*. Three wells were made by removing agar at equidistant points. The test materials were placed immediately into the wells after manipulation. The plates were kept for 2 hours to allow prediffusion, then incubated for 24 hours (*E. faecalis*) and 48 hours (*C. albicans*, *Actinomyces sp.*) at 37°C. After 48, 72 and 96 hours, the inhibition zones were measured in millimeter using a digital caliper with 0.01 mm precision at two equidistant points, for three consecutive times. The data were analyzed using repeated measures ANOVA, and the level of significance was set at 5%. The results showed that all materials inhibited the growth of *C. albicans*. No statistical differences were found between non-accelerated WMTA and WPC at every time interval ($p > 0.05$). The addition of setting accelerator significantly increased the inhibitory effect of both WMTA and WPC, in which accelerated WMTA created the largest inhibition zones, and the difference was statistically significant ($p < 0.05$). However, this inhibitory effect remains almost stationary at every time interval for all groups. On the contrary, all materials did not exert any antibacterial activity against *E. faecalis* and *Actinomyces sp.*, despite being diffused adequately in the agar.

Evaluation of antimicrobial activity of banana pulps against *Streptococcus mutans*

BS4

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The banana has been found to possess significant antiulcerant, antibacterial, wound healing and anti-allergic activity. Traditionally, banana latex is used to cure toothache. This study aimed to evaluate the antimicrobial activity of three types of banana (*Musa sapientum*, *Musa acuminata balbisiana*, *Musa balbisiana*) pulps against oral bacteria which are associated with the development of dental caries, i.e. *Streptococcus mutans*. This is an experimental laboratory study whereby three different types of banana pulps were extracted using hot dry methods. Then the powder of banana pulp extraction was diluted with normal saline at 50°C prior use. Disc diffusion method was used on nutrient agar with *S. mutans*. Three different concentrations of banana pulp extractions (0.5mg/ml, 2.0mg/ml, and 5.0mg/ml) were loaded into sterile discs and incubated for 24 hours at 37°C. Amoxicillin and distilled water were used for positive and negative control respectively. The experiment was conducted in triplicate for each concentration. The diameter of inhibition zone, which corresponded to the strength of antibacterial activity, was measured. Discs treated with different concentration of banana pulp extractions did not show any inhibition zone as compared to the positive control. This finding demonstrated there was no antibacterial activities of the pulp obtained from the three species of banana to *S. mutans*. Further study on the antibacterial activity of other parts of banana tree and from different species of banana against *S. mutans* will be needed.

Surface hardness and surface characteristic changes of giomer after cyclic immersion in different beverages and titratable acidity

BS5

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Several beverages may affect surface hardness of giomer. This study aimed to investigate the effects of five beverages (apple cider, orange juice, Coca-Cola, coffee, and beer) on microhardness and surface characteristic changes of giomer. Ninety-three specimens of giomer were prepared. Before immersion, baseline data of Vicker's microhardness was recorded and surface characteristics were examined using scanning electron microscopy (SEM). Five groups of discs ($n = 18$) were alternately immersed in 25 mL of each beverage for 5 seconds and in 25 mL of artificial saliva for 5 seconds for 10 cycles. Specimens were then stored in artificial saliva for 24 hours. This process was repeated for 28 days. After immersion, specimens were evaluated and data were analyzed by one-way repeated ANOVA, Tukey's HSD, and a t -test ($\alpha = 0.05$). The results showed that beverages in this study presented acidic solutions. In titratable acidity test, apple cider required the highest volume of NaOH. Apple cider was the most beverages that affected the giomer. Microhardness of all groups significantly decreased after being immersed in the tested beverages ($p < 0.05$). SEM photomicrographs presented surface degradation of all groups. The effect of these beverages on the surface of giomer also depended upon the exposure time and chemical composition of the restorative materials and beverages.

The effectiveness of betel leaves and chlorhexidine mouthwash in reducing plaque

BS6

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Betel leaves and chlorhexidine mouthwash could reduce plaque on the tooth surfaces. The purpose of this study was to compare the effectiveness of betel leaf and chlorhexidine mouthwash in reducing plaque. A quasi-experimental research method was performed on 30 children aged between 11 and 14 years in Wisma Putra Orphanage, Bandung. Thirty children were divided into two groups which Group 1 ($n=15$) rinsed with betel leaves mouthwash and Group 2 ($n=15$) rinsed with chlorhexidine. Rinsing was done twice a day for 5 days. Plaque index were scored daily. Plaque levels were measured using the Turesky's modification of the Quigley & Hein Plaque Index. The results showed that both of the mouthwashes studies turned out to be statistically significant, but Group 2 showed significant improvement in plaque index, when compared to Group 1. This study concludes that Chlorhexidine mouthwash is more effective than betel leaves mouthwash in reducing plaque in children.

Keywords: herbal mouthwash, chlorhexidine, plaque index, children

Effects of melittin on dental stem cell proliferation and expression of stem cell gene markers

BS7

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Stem cells harvested from dental pulp (DSCs) are multipotential mesenchymal stem cells that commit to the osteogenic cell lineage. Previous study suggested that bee venom could induce stem cells to osteocyte. Thus, melittin, a component of bee venom was used in this study for osteogenic differentiation. This study aimed to determine the effectiveness of melittin on DSCs proliferation and differentiation based on expression of stem cell gene markers. Commercial DSCs of human exfoliated deciduous teeth (SHED) (AllCells, USA) were treated with various low concentrations of melittin for 72 hours. The viability of the treated cells were observed using PrestoBlue assay to determine the cell growth. Then, RNA of the cells treated with 1 and 4 µg/ mL melittin was extracted using RNA extraction kit (Qiagen, Germany). The extracted RNA was subjected directly to OneStep RT-PCR (Qiagen, Germany) to amplify genes of the stem cell markers; *nestin* and *rex1*. A housekeeping gene, β -actin too was amplified. These RT-PCR products were electrophoresed on agarose gel and the image was digitalised using Image Analyser. Results indicated there was no significant difference in cell growth of DSCs treated with various concentrations of melittin. The gene expressions of stem cell markers and β -actin showed no differences in all treated DSCs compared to control. As a conclusion, after 72hours, different concentrations of melittin used in this study had no effect on DSCs proliferation and gene expression of its stem cell markers. Further research is suggested for an extended time-course experiment.

Effect of Interleukin-17a on the proliferation and osteogenic differentiation of SHED

BS8

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Cytokines are well known as important regulatory proteins in our body which play multiple roles in human's biological activities. They are capable of modulating immune responses as well as stimulating activities of different types of cells and tissues depending on types of cytokines. Interleukin-17 is a newly found family of cytokines whereby its biological activities are still not well documented aside from its pro-inflammatory nature. There were studies reported that it might act as one of the important regulators in bone homeostasis. This suggests that it could be manipulated to modify the progression of bone diseases or even be a vital element for stem-cell based therapies for bony defects. The aim of this study was to determine the effect of different concentrations of IL-17a in the proliferation and osteogenic differentiation of stem cells derived from human exfoliated deciduous teeth (SHED). SHED were cultured in 96-well plates at density of 5000 cells per well. Various concentrations (1ng, 5ng, 10ng and 25ng) of IL-17a were tested on the SHED using MTS (proliferation) and ALP assay (osteogenic differentiation). MTS was carried out on Day 1,2,3 and 4 while ALP was done on Day 3, 7 and 14. Data were plotted on histogram and analysed statistically using Kruskal-Wallis and Mann Whitney tests as post-hoc analysis with $p < 0.05$ indicate statistical significance. Increment in proliferation and osteogenic differentiation of SHED under treatment with IL-17 were seen in dose-dependent manner, however the results were statistically not significant.

Bone marker expression by human periodontal ligament fibroblast in 3-Dimensional culture

BS9

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Periodontal ligament is a connective tissue located between the cementum of teeth and the alveolar bone. It plays an integral role in the maintenance and regeneration of periodontal tissue. This study aimed to grow and compare the expressions of β -actin, COL1 and ALP genes in 2D and 3D culture of human periodontal ligament fibroblast cells (HPDLF). HPDLF was cultured in basic growth medium at 37°C for 5-7 days until 80-90% confluent for 2D (as control) and 3D (spheroid) cultures. Equal numbers of HPDLF cells from passage 9 were used for both types of cultures. HPDLF in 3D and 2D cultures were harvested at days 3 and 7 respectively, and subjected for RNA extraction. Three genes, β -actin, COL1 and ALP, were selected for amplification using Reverse Transcriptase-PCR (RT-PCR) method. The amplified genes, were electrophoresed on agarose gel before the image of the gel being digitalised using Image Analyser. 2D culture of HPDLF cells showed expected expression of β -actin and ALP genes, while the gene expressions for the 3D culture were different from that of the 2D culture. COL1 gene, on the other hand, was not expressed in HPDLF cells of both cultures. In conclusion, HPDLF cells of 2D culture showed expected expression of β -actin and ALP genes while the expressions of 3D culture differed from the 2D one. COL1 gene, on the other hand, was not expressed in HPDLF cells of both cultures.

Bacterial accumulation on Tooth-Coloured Restorative (TCR) materials

BS10

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Nowadays, tooth-coloured restorative (TCR) materials have become popular options for dentists and patients. There are many types of TCR available in the market. Each of them has different composition that has direct effect of their surface roughness. Surface roughness is thought to be an important factor in determining the amount of bacterial accumulation. Specimens (Filtek Z350, Filtek Z250, Fuji II, Ketac N100) were packed into acrylic moulds and light cured for 40 sec. Then, all the specimens, (n= 3) were polished with Sof-Lex discs for 60 seconds. The surface roughness was analyzed by using Atomic Force Microscope (AFM, Ambios, USA). The specimens were then placed in container with 40ml brain heart infusion broth solution and 10 μ l of *Streptococcus mutans* (ATCC 35668) stock and incubated at 37°C for 7 hours and 24 hours depending on group. Then, after several processes, the specimens were viewed under CLSM. The data was analyzed using SPSS version 2.0 at significance level of 0.05. The result showed that there was significant difference in the thickness of bacterial accumulation on each specimen after 7 hours of incubation ($p=0.03$) but no significant difference after 24 hours of incubation ($p=0.82$). There was also no significant difference between bacterial accumulation after 7 hours and 24 hours of bacterial incubation ($p=0.38$). Amount of bacterial adhered on the restoration surface only affected by the surface roughness of restoration at the first 7 hours. After 24 hours, the amount of further bacterial adhered was not affected by the surface roughness of the restoration.

POSTER PRESENTATION

Patient satisfaction towards root canal treatment with post core restoration treated by undergraduate dental student for the past 5 years, USM

P1

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Longevity studies for endodontically treated teeth restored with post core are sometimes hard to be compared due to differences in study design and the unknown quality of coronal seal. This study is aimed to determine the patient satisfaction towards root canal treatment with post core restoration treated by undergraduate dental student at Hospital Universiti Sains Malaysia (HUSM) Dental Clinic for the past 5 years. The success rate of the treatment also evaluated. Patient that had undergone root canal treatment with post core and crown placement from 2008-2012 was selected to be research subject (n=36). List of patients were traced back using registration book and treatment's progress were recorded by reviewing patient's case notes. Patients were then clinically reviewed and for those who did not turn up were interviewed via phone call. The data was key-in using SPSS 20.0 and analysed. 75% (25) patient were satisfied with the treatment received, 94.4% (34) of patient's tooth is still survive despite the tooth vitality and the most common failure was due to symptomatic complain 19.4% (7). Patient's satisfaction is subjective concept that might be misinterpreted unless clinical review was done. Understanding patient's satisfaction is important to view patient's perspective on dental treatment they had received.

Dental alginate waste for additional fertilizer of soil quality and plant crops

P2

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Dental alginate impression material is the most common material used in dental service. That is one of many wastes in dentistry. The aim of research is to find out the effect of dental alginate impression waste on quality of soil used and plant crops. The soil used was Jatinangor Ultisol and the crops were cauliflower. The effect was measured by pH of the soil and weighed the crops. The research was obtained by randomized block design with 4 treatments and 7 replications. The treatments consisted of A0 (for 0% dental alginate impression waste as control), A1 (0,01% dental alginate impression waste), A2 (0,1% dental alginate impression waste) and A3 (1% dental alginate impression waste). Application of dental alginate impression waste was showed significant effect to plant crops (cauliflower crop weight) in which A1 treatment and A2 treatment had increased cauliflower crops to 1.92 times and 1.80 times compared with the A0 as control. However dental alginate impression waste did not affect the quality of the soil.

Antibiotic prescription practices in Hospital USM Dental Clinic.

P3

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Antibiotic is a chemical substance that can inhibit or destroy the growth of microorganism with little or no harm to the infected host. Dental pain and odontogenic infection are the most common clinical conditions presented to dental clinic, thus antibiotic has become the most commonly prescribed medicine by dentists. This study aimed to investigate the antibiotic prescription practices in Hospital USM Dental Clinic. This is a cross-sectional study where data of walk-in patients attending Hospital USM Dental Clinic from 18th October 2013 to 28th October 2013 prescribed with antibiotics were recorded. Data were analyzed using SPSS software 20.0. The results obtained showed that acute periapical periodontitis (24.3%) was the most common clinical condition prescribed with antibiotics in Hospital USM Dental Clinic, followed by dental abscess (21.6%) and irreversible pulpitis (18.9%). The antibiotics prescribed were metronidazole 400 mg, amoxicillin-trihydrate (250 and 500 mg) and amoxicillin-clavulanate 625 mg. The drugs given in combination (amoxicillin-trihydrate + metronidazole and amoxicillin-clavulanate + metronidazole) contributed 15.6%, while metronidazole given alone accounted for 68.7% and amoxicillin-trihydrate given alone accounted for 15.6%. Metronidazole given alone contributed 77.7% of all drugs prescribed for acute periapical periodontitis, followed by amoxicillin-trihydrate (11.1%) and combined antibiotics (11.1%). Most of the antibiotic prescriptions were given for five days three times daily. Acute periapical periodontitis was the most frequent clinical condition presented to Hospital USM Dental Clinic. The most frequently-prescribed antibiotics were metronidazole and amoxicillin-trihydrate. Although no proper guideline was provided in Hospital USM Dental Clinic, there were preferences of antibiotic prescription practices in managing dental cases.

An *in vitro* study of antibacterial properties of luting cements

P4

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In fixed partial dentures (FPDs), dental luting agents serve as the link between the prepared, supporting tooth, and the prosthetic tooth material. However, FPD tend to failure due to formation of secondary caries and *Streptococcus* is identified as the most frequently involved in caries formation. Antibacterial properties of dental luting cements towards oral bacteria can give a great significance in improving the potential of formation of secondary caries. The aimed of this study were to compare the antibacterial properties of three different luting cements on *Streptococcus mutans* and *Streptococcus sobrinus* and to evaluate the antibacterial properties of three different luting cements during and after setting on two different microorganisms. Three dental luting cements, KetacTM Cem AplicapTM, Panavia ExTM and Variolink®, were used in this study. Agar well diffusion test (ADT) was used to evaluate antibacterial properties of dental luting cements. Dental luting cements were tested on Brain Heart Infusion Agar and zone of inhibition exhibited by the materials were measured with digital caliper. Data was analyzed statistically using Kruskal-Wallis and Mann-Whitney Test. From the result, Panavia shows the greatest antibacterial properties on *Streptococcus mutans* 4.30mm (p=0.021) and *Streptococcus sobrinus* 2.05mm (p=0.104) during setting with a significant difference (P <0.05) followed by Variolink and Ketac Cem. Panavia and Variolink have better antibacterial property during setting on *Streptococcus mutans* and *Streptococcus sobrinus* but Ketac Cem posses better antibacterial property after setting on *Streptococcus mutans* 1.40mm (p=0.471). In conclusion, Panavia, Ketac Cem and Variolink exhibit antibacterial properties against *Streptococcus mutans* and *Streptococcus sobrinus*.

Effects of *Nigella sativa* on Stem Cells from Human Exfoliated Deciduous Teeth (SHED)

P5

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Nigella sativa, commonly known as black seeds or black cumin is a traditional medicinal plant which has been used in folk medicine for the treatment and prevention of a variety of diseases besides for general well-being. This research intends to study the potentials of *Nigella sativa* to affect proliferation of Stem Cells from Human Exfoliated Deciduous Teeth (SHED) which had been identified as highly proliferative, and capable of differentiating into various cell types. Thus, the aim of this study was to determine the effect of *Nigella sativa* on the proliferation of SHED using cell viability assay. A total of 1000 SHED cells were seeded into wells of a 96-well plate. Different concentrations of *Nigella sativa* oil extract: 200 µg/µl, 100 µg/µl, 50 µg/µl, 25 µg/µl, 15 µg/µl, 10 µg/µl, 1 µg/µl, and 500 ng/µl, were placed onto the cells in triplicates. Absorbance at 570 nm was taken at time intervals: 0, 2, 18, 24, 48 and 72 hour. Graph of relative index of absorbance versus time for each concentrations were then plotted. *Nigella sativa* was found to have a proliferative effect on SHED, especially at concentration 200 µg/µl, as compared to controls without the presence of *Nigella sativa*. The proliferative effect of *Nigella sativa* on SHED was still apparent even after 72 hours of incubation. The findings of this study provide preliminary results on the proliferative effect of *Nigella sativa* on SHED.

Evaluation and comparison of decalcification process by different commercial decalcifying agents on human teeth and rat alveolar bone specimens

P6

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Decalcification is very important during histopathological process for hard tissues. Currently, there are many commercial decalcifying agents available. This study was carried out to evaluate the rate of the commercial decalcifying agents. Three commercial decalcifying agents were chosen to decalcify human teeth and rats' alveolar bones: RDO Rapid Decalcifier® (Apex Engineering Products Corporation), Osteomoll® (Merck Millipore International) and Shandon TBD-2 Decalcifier® (Thermo Fisher Scientific Inc.). The positive control was 5% nitric acid, while normal saline was the negative control. The endpoint of the decalcification process was determined by blotting and weighing method, chemical method and radiographic method at timely intervals. We found that the fastest decalcifying agents for teeth based on blotting and weighing method is Osteomoll®, followed by RDO and 5% nitric acid. For alveolar bone, the results were as follows: Osteomoll® being the fastest, followed by 5% nitric acid and RDO®. Shandon TBD-2® was the slowest decalcifying agent for both bone and teeth. The results of rate of decalcification of bone by chemical method showed that RDO being the fastest, followed by Osteomoll®, 5% nitric acid and Shandon TBD- 2®. As for teeth, results showed that both Osteomoll® and RDO® have equal rate, while Shandon TBD- 2® was the slowest. Based on the findings in this study, Osteomoll® is the best all round decalcifying agent for alveolar bone and teeth. This study also found that RDO® decalcifier is the best alternative which gives similar results with a slightly lower price per litre.

Effect of temperature on proliferation activity of human periodontal ligament fibroblast cells

P7

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Human periodontal ligament fibroblast (HPDLF) is a connective tissue embedded between cementum of teeth and alveolar bone. It participates actively in immune and inflammatory events in periodontal diseases. It is assumed that cultured cells derived from humans grow best at normal body temperature ie. 37°C. At optimum temperature, most HPDLF cells are highly active with large and elongated morphology. However, effect of temperature on cell growth and their morphology changes are not fully documented. The aim of this study was to investigate the effect of temperature on proliferation activity and cell morphology of HPDLF. The study was conducted *in vitro* using HPDLF obtained from ATCC. HPDLF were seeded at cell densities of $1 \times 10^3/\text{cm}^2$ and $1 \times 10^4/\text{cm}^2$ in 35mm petri dish. Cells were maintained in complete medium containing α -MEM, 10% FBS and 1% penicillin/streptomycin. They were incubated in Live Cell Imaging microscopy system with incubator chamber at 35°C, 37°C and 39 °C for 24 hours. Images were captured at 30 minutes intervals for cell morphology study. The population doubling time (PDT) was determined and number of cells were counted manually using a haemocytometer. At 37°C, proliferation activity of HPDLF was the highest with the shortest PDT for both high and low seeding densities. HPDLF proliferation at 35°C and 39°C showed slower proliferation rate. Cell morphology did not show any obvious differences between different temperatures and seeding densities. They were generally large and elongated. In conclusion, 37°C is the optimum temperature for HPDLF proliferation. Deviation from 37°C affects cell proliferation rate but not cell morphology.

Association between sleepiness and academic performance among dental students, School of Dental Sciences, Universiti Sains Malaysia (USM)

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Daytime sleepiness is a common symptom that associates with other complaints such as poor concentration and forgetfulness. It is believed to be associated with poor performance at workplace and school. This study was aimed to evaluate the effect of sleepiness on academic performance among dental students of the School of Dental Sciences in USM. It was a cross sectional study whereby 198 students of year two to year five (n=198) were selected. Selected subjects were asked to complete a guided questionnaire which consists of socio-demographic profiles and Epworth Sleepiness Scale (ESS). Data were analysed and presented as percentages of occurrence. A multiple regression analysis was performed to assess the association between ESS score and end of year examination results. The regression also include other potential confounders such as gender, body mass index, MUET, pre-university results and type of pre-university courses with $p < 0.05$ indicates statistical significance. Sleepiness were observed to be 51.9% in males and 43.2% in females with an overall total of 38.4% are having mild sleepiness, 6.6% moderate and 0.5% severe. There was no significant association between ESS score and end of year results for each year ($p > 0.05$). The regression model for students in year two only explained 11.0% variation of end Year 2 examination; year three, 22.1% variation of Professional II examination; year four, 4.0% variation of end of Year 4 examination and year five, 26.9% variation of Professional III examination. In conclusion, there is no association between sleepiness and academic performance among dental students, School of Dental Sciences, USM.

The Relationship between Sleep-Wake Habits and Academic Performance among Form Three Students in Kubang Kerian, Kelantan

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Sleep plays an important role in learning process and memory consolidation. Poor sleep quality, shortened sleep duration, erratic sleep/ wake habit, late bed and rise times are closely associated with academic performance. The aim of this study was to determine the association between sleep-wake habits and academic performance among Form Three students in Kubang Kerian, Kelantan. This was a cross-sectional study. The study population consists of 229 students in two secondary schools in Kubang Kerian. The consent forms and the validated Pittsburgh Sleep Quality Index (PSQI) questionnaires were distributed to all the respondents during their school hours to assess their sleep quality index. The questionnaire includes the recent bedtimes, rise times and total sleep times. Other questions of sleep quality and habits were also included in the questionnaire. Academic performance was measured and assessed by analysing the self-reported marks of eight subjects obtained in their recent trial PMR examinations. The data collected were analysed statistically using the ANOVA test and the independent T-test with $p < 0.05$ indicates statistical significance. Result showed that respondents with higher marks in PMR trial examination had significant better sleep quality ($p < 0.05$). This study also showed that shorter sleep duration is significantly associated with lower marks scored by the respondents in the PMR trial examination ($p < 0.05$). In conclusion, short sleep duration and poor sleep quality are associated with the academic performance among Form Three students in Kubang Kerian, Kelantan.

An *in-vitro* study of antimicrobial effect of *Euphorbia tirucalli* (Tetulang) on oral bacteria

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Euphorbia tirucalli (*Et*) is reported to possess antibacterial activity against various microorganisms. However, antimicrobial properties of *Et* against oral bacteria has not been extensively tested. This study aimed to evaluate the antimicrobial activity of *Et* against two oral bacteria; *Streptococcus mutans* and *Streptococcus sobrinus*, which are associated with the development of dental caries. Different solvents were used (methanol, ethanol, water) to extract the metabolites form of *Et* stem. The extracted samples were then used for evaluation of antimicrobial activity using agar-well diffusion method at different concentrations (10, 20 and 30 mg/ml). Commercially available amoxycillin (10 µg) was used as positive control while the appropriate solvent served as negative control. The diameter of inhibition zone (mm) was measured after 24 hours. The experiment was conducted in triplicates for each concentration. Results obtained from antimicrobial activity revealed that methanolic extract of *Et* stem showed the highest antimicrobial activity against *S. mutans* (9.67mm) and *S.sobrinus* (8.67 mm), followed by ethanolic extract (*S. mutans*: 8.33 mm and *S.sobrinus*: 7.67 mm). Water extract showed no activity against the bacterial strains used in this study. As a conclusion, the methanolic and ethanolic extracts of *Et* stem were found to be effective against both *S. mutans* and *S.sobrinus* as compared to water extract. The differences in the antimicrobial properties in different extracts of *Et* are due to the differences in phytochemical constituents.